REMARKS/ARGUMENTS

This paper is intended as a full and complete response to the Office Action dated December 21, 2005, having a shortened statutory period for response set to expire on March 21, 2006.

Claims 1, 2, 4, 5, 7, 9, 11, 12, 15, 16, 17, and 22 are amended in the Application.

Claims 19-21 and 23 have been withdrawn in the Application

Claims 1-18 and 22 are pending in the Application.

I. Election Restrictions

The Office Action stated that election to one of the following species for prosecution on the merits is required.

Applicant hereby elects iron and iron alloys and titanium and titanium alloys with traverse for Applicant's Claims 1-18.

The Office Action stated that election to one of the following species for prosecution.

Applicant hereby elects nitrogen with traverse for Applicant's Claim 14.

The Office Action stated that election to one of the following species for prosecution on the merits is required.

Applicant hereby elects double-walled insulated chamber with traverse for Applicant's Claim 1.

II. Specification

The Office Action objected to the disclosure due to informalities.

Applicant has amended the disclosure in the manner as suggested by the

examiner. Applicant believes that the disclosure has been amended in such a way to obviate the objection. Applicant believes that no new subject matter has been added. Reconsideration of the disclosure in view of the amended disclosures is respectfully requested.

III. Drawings

The Office Action objected to the drawing due to informalities.

Applicant has renumbered the specification so that the heat exchanger feature is now shown in the drawings.

Applicant has deleted the following reference sign(s) mentioned in the description but not shown in the drawings, 11, 15, 39, 32, 34, 36, 38, 40, 42, 44 from the detailed description.

Applicant has included the following reference sign(s) shown in the drawings but not mentioned in the description, 28a and 28b to the detailed description.

Applicant had amended character reference 18 to designate only one object.

Applicant has amended the specification so that 20, 22, 24, 26, and 28 do not refer to multiple features.

Applicant believes that the amendments have been done in such a way to obviate the objection. Applicant believes that no new subject matter has been added. Reconsideration of the drawings in view of the amended disclosure is respectfully requested.

IV. Claim Objections

The Office Action objected to Claim 22 due to informalities.

Applicant has amended Claim 22 in the manner as suggested by the examiner. Applicant believes that Claim 22 has been amended in such a way to obviate the objection. Reconsideration of the Claim in view of the amendment is respectfully requested. Applicant believes that no new subject matter has been added.

V. Claim Rejections 35 USC § 112

The Office Action rejected Claim 1 under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which at regards as the invention.

Applicant has amended the Claims so that the term "material" is used instead of "metal". Applicant believes changing the terminology used in the Claims clarifies what substances can be used. The specification has also been amended to include the definition of a "material" as a "metal". Applicant believes that no new subject matter has been added. Reconsideration of the rejection is respectfully requested in view of this argument.

The Office Action rejected Claims 12 and 13 under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Applicant has amended Claims 12 and 13. Applicant believes that the Claims have been amended in such a way to overcome the rejection. Applicant believes that no new subject matter has been added. Reconsideration of the Claim in view of the amendment is respectfully requested.

VI. Claim Rejections 35 USC § 102

The Office Action rejected Claims 1-2, 4-11, 15-18 and 22 under 35 USC § 102(b) as being anticipated by *Bryson*.

Bryson teaches away from using heating elements in a chamber, Applicant's chamber is described as a processor in *Bryson* (*Bryson* page 53 lines 1-3). In *Bryson* "If your processor is equipped with heating elements, it is strongly recommended that they should be totally disconnected and never used" (*Bryson* page 53 lines 1-3). *Bryson* teaches, "Heating the chamber with no nitrogen present removes the desired source of protection from positive pressure in the chamber; that allows atmosphere to enter through the exhaust connection or opened lid..." (*Bryson* page 53 lines 27-31). Without any heating elements the maximum

temperature *Bryson*'s processor can ever reach is room temperature. *Bryson* does not anticipate heating an item beyond room temperature.

Applicant's Application utilizes a one unit chamber that is able to cool the material and heat the material (Applicant's Application Claim 1). This one unit process provides significant benefits of ease and practicality that *Bryson* teaches away from and does not demonstrate any desirability to promote. Applicant's Application teaches improving structural characteristics of a material by utilizing a thermal process that heats and cools materials in a one unit chamber. Applicant's Application has the ability to heat the metal to a temperature of 1400 degrees F (Applicant's Application Claim 1).

Claims 2, 4-11, 15-18 and 22 depend upon independent Claim 1, and therefore include all of the limitations thereof. Since Applicant believes that independent Claim 1 is patentably distinct from *Bryson*, Claims 2, 4-11, 15-18 and 22 are patentably distinct from *Bryson* as well. Reconsideration of the rejection to the Claims in view of the remarks is respectfully requested. Applicant believes that no new subject matter has been added.

VII. Claim Rejections 35 USC § 103

The Office Action rejected Claims 1-3, 7-10 and 15 under 35 USC § 103(a) as being unpatentable over *Groll* (US 6,544,669) in view of *Bryson*.

According to *Hodosh v. Block Drug Co., Inc.*, 786 F.2d 1136, 1143 n.5, 229 USPQ 182, 187 n.5 (Fed. Cir. 1986). When applying 35 U.S.C. 103, the following tenets of patent law must be adhered to:

> (A) The claimed invention must be considered as a whole;
>
> (B) The references must be considered as a whole and must suggest the desirability and thus the obviousness of making the combination;
>
> (C) The references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention; and

(D) Reasonable expectation of success is the standard with which obviousness is determined.

Accordingly, the references as provided by the Office Action do not suggest the desirability and thus the obviousness of making the combination taught in Applicant's Application.

Bryson teaches away and demonstrates no desirability of using heating elements in a chamber, Applicant's chamber is described as a processor in *Bryson* (*Bryson* page 53 lines 1-3). In *Bryson* "If your processor is equipped with heating elements, it is strongly recommended that they should be totally disconnected and never used" (*Bryson* page 53 lines 1-3). *Bryson* teaches, "Heating the chamber with no nitrogen present removes the desired source of protection from positive pressure in the chamber; that allows atmosphere to enter through the exhaust connection or opened lid..." (*Bryson* page 53 lines 27-31). Without any heating elements the maximum temperature *Bryson*'s processor can ever reach is room temperature. If one were to heat an item beyond room temperature using *Bryson's* processor it would not be possible as an additional heating apparatus must be used. *Bryson* does not anticipate heating an item beyond room temperature.

Groll teaches a suitable rate of cooling and heating at about one degree per minute from "about 250° F to 350° F" (*Groll* Column 5 lines 4-15, noting Certificate of Correction).

The references considered as a whole do not suggest the desirability and thus the obviousness of making the combination of *Groll* and *Bryson*. *Bryson* strongly objects to equipping the processor with heating elements, thereby permitting the processor to heat beyond room temperature. While *Groll* teaches a rate of heating up to 350° F.

Applicant's Application teaches a rate of heating and cooling at a larger range than the one degree per minute as taught by *Groll*. Applicant's Application teaches a rate of heating and cooling between 0.25 degrees per minutes and 20 degrees per minute (Applicant's Application Claim 1). This increased range provides Applicant's Application greater control of the time and conditions necessary for particular materials to heat and cool. This added ability to heat and cool at a slower rate or a higher rate allows the user the ability to improve and alter

structural characteristics of materials.

Groll teaches a cooling to "less than -100°F., preferably less than -300°F" (*Groll* Column 5 lines 4-15). In addition, the heating is only taught from "about 250° F to 350° F" (*Groll* Column 5 lines 4-15, noting Certificate of Correction).

Applicant's Application permits a greater range for the metal to cool down to and heat up to. The cooling, the first target temperature ranges from -40°F and -380°F (Applicant's Application Claim 1). The heating, the second target temperature ranges from 0°F and 1400°F (Applicant's Application Claim 1). This increased range provides Applicant's Application greater control of the time and conditions necessary for particular materials to heat and cool. This added ability to heat and cool at a slower rate or a higher rate allows the user the ability to improve and alter structural characteristics of materials.

Claims 2-3, 7-10 and 15 depend upon independent Claim 1, and therefore include all of the limitations thereof. Since Applicant believes that independent Claim 1 is patentably distinct from *Groll* (US 6,544,669) in view of *Bryson*, Claims 2-3, 7-10 and 15 are patentably distinct from *Groll* (US 6,544,669) in view of *Bryson* as well. Reconsideration of the rejection to the Claims in view of the remarks is respectfully requested. Applicant believes that no new subject matter has been added.

The Office Action rejected Claims 12-14 under 35 USC § 103(a) as being unpatentable over *Bryson* in view of *Weisend* (Handbook of Cryogenic Engineering).

Claims 12-14 depend upon independent Claim 1, and therefore include all of the limitations thereof. Since Applicant believes that independent Claim 1 is patentably distinct, dependant Claims 12-14 are patentably distinct as well. Reconsideration of the rejection to the Claims in view of the remarks is respectfully requested. Applicant believes that no new subject matter has been added.

VIII Double Patenting

The Office Action rejected Claims 1-5 and 7-16 based on the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 3-11 of co-pending Application No. 10/784,071.

Applicant has filed a terminal disclaimer in compliance with 37 CFR 1.321(c) to overcome any rejection based on the nonstatutory double patenting ground as Patent Application No. 10/784,071 and 10/783,932 are commonly owned by Applicant.

The Office Action rejected Claims 1-5, 7-16 and 22 based on the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 10-17 and 21 of co-pending Application No. 10/783,934.

Applicant has filed a terminal disclaimer in compliance with 37 CFR 1.321(c) to overcome any rejection based on the nonstatutory double patenting ground as Patent Application No. 10/783,934 and 10/783,932 are commonly owned by Applicant.

The Office Action rejected Claims 1-5, 7-17 and 22 based on the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-14 and 22 of co-pending Application No. 10/783,933.

Applicant has filed a terminal disclaimer in compliance with 37 CFR 1.321(c) to overcome any rejection based on the nonstatutory double patenting ground as Patent Application No. 10/783,933 and 10/783,932 are commonly owned by Applicant.

Applicant appreciates the Examiner's time and attention to this matter. Applicants believe Claims as now provided are in condition for allowance. Reconsideration of this application is respectfully requested. The Applicant invites the Examiner to contact the Applicant's representatives (713.403.7411) if any questions concerning this Application arise.

Respectfully submitted,

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Date: 4/20/06

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